

In re Patent Application of:
BYUN, II ET AL.
Serial No. 10/522,049
Filing Date: JANUARY 20, 2005

REMARKS

Applicants thank the Examiner for the thorough and careful examination of the present application. Applicants have amended independent Claim 1 to recite the subject matter of dependent Claim 8. Dependent Claim 4 has been amended to correct a typographical error. Applicants have also canceled dependent Claims 8 and 9.

Applicants submit that no new matter is introduced and that no new issues are raised by the amendments presented herein. Based on the arguments and amendments presented, Applicants believe all claims to be patentable.

I. The Claimed Invention

Amended independent Claim 1, for example, is directed to a method for connecting microcircuits. The method includes providing an insulating resin solution and applying the insulating resin solution to each circuit board having circuit patterns. The insulating resin solution is formed on a plain portion and a side portion of the circuit patterns and a bottom portion of the circuit board. The method further includes aligning the circuit boards to face each other so that electrodes of the circuit boards face each other, in order to connect the corresponding electrodes of the circuit patterns formed in each circuit board. Additionally, the method includes positioning an anisotropic conductive adhesive between the circuit boards. The method further includes heating the circuit boards and applying a predetermined pressure to a side of each circuit board opposite

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the anisotropic conductive adhesive so that corresponding electrodes are connected each other.

II. The Claims Are Patentable

The Examiner rejected independent Claim 1 over the Anderson et al. patent in view of the Fuji et al. patent application. The Anderson et al. patent discloses a laminating process for interconnecting laminates including respective opposing conductive layers and dielectric coverlayers. The Anderson et al. patent further discloses a conductive adhesive layer of non-conductive material with conductive particles to interconnect the laminates. (Col. 13, lines 6-26). The dielectric coverlayers are selectively screen-printed over the conductive layers. (Col. 13, lines 27-31). The Anderson et al. patent further discloses curing the dielectric ink within an oven. (Col. 13, lines 50-57).

Moreover, the Anderson et al. patent teaches the desirability of thin dielectric coverlayers. Indeed, the Anderson et al. patent touts this characteristic of its dielectric coverlayers being made through an ink material process. (Col. 14, lines 32-47). The Anderson et al. patent also discloses that the dielectric coverlayers preferably have a thickness of 5 microns or less. (Col. 14, lines 36-38). The Examiner correctly notes that the Anderson et al. patent does not disclose an insulating resin solution, as recited in independent Claim 1, and looks to the Fuji et al. application for such.

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The Fuji et al. application discloses a method for applying resin solution to the surface of a printed circuit. (Paragraphs 25-27). The Fuji et al. application further discloses subsequent drying of the resin to provide a hardened, electrically insulating, and impact resistant coverlayer. (Paragraph 29). Furthermore, the Fuji et al. application discloses that the thickness of the coverlayer is within the range of 5-100 microns and preferably 10-20 microns. (Paragraph 31). In fact, the Fuji et al. application teaches that a thickness below 5 microns is undesirable due to deterioration of the mechanical strength of the coverlayer. (Paragraph 31). The Examiner contends it would have been obvious to use this method on the conductive layers discussed in the Anderson et al. patent.

Applicants respectfully submit that the Examiner's proposed combination of the Anderson et al. patent and the Fuji et al. application is improper. The Anderson et al. patent teaches the desirability of thin dielectric coverlayers with thicknesses less than 5 microns whereas the Fuji et al. application teaches a resin coverlayer with thickness preferably between 10-20 microns. The Fuji et al. application does not disclose the capability of achieving the thin characteristics of the Anderson et al. patent. A person of ordinary skill in the art would be taught away from the modification of the Anderson et al. patent's dielectric ink coverlayer with the resin coverlayer of the Fuji et al. application. For this reason alone, there is no proper motivation to combine the references as the Examiner is using Applicants' specification as a template in an effort to

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combine disjoint pieces of the prior art using impermissible hindsight reconstruction.

Moreover, the proposed combination of the Anderson et al. patent and the Fuji et al. application produces a result that is inoperable. As recited in independent Claim 1, the claimed method includes heating the circuit boards and subsequently applying a predetermined pressure to a side of each circuit board opposite the anisotropic conductive adhesive so that corresponding electrodes are connected to each other. As suggested by the Examiner, if the resin of the Fuji et al. application was used to modify the Anderson et al. patent, the result would be inoperable since the resin of the Fuji et al. application would have been heated prior to the joining step. Using the now hardened, impact resistant, and electrically insulating resin of the Fuji et al. application, the conductive particles of the Anderson et al. patent would not penetrate the resin, in contrast to the embedded conductive particles depicted in Figure 2 of the Anderson et al. patent. Accordingly, for this reason also, there is no proper motivation to combine the references in the manner suggested by the Examiner.

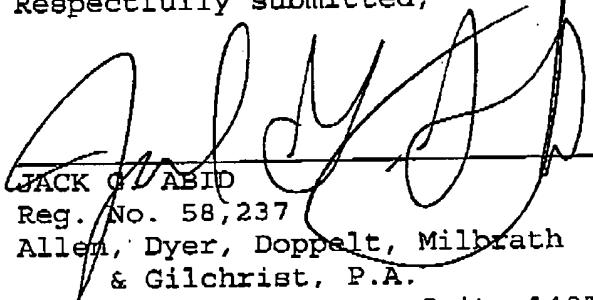
Accordingly, it is submitted that amended independent Claim 1 is patentable over the prior art. Its respective dependent claims, which recite yet further distinguishing features, are also patentable over the prior art and require no further discussion herein.

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CONCLUSIONS

In view of the foregoing arguments and amendments, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,



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CERTIFICATE OF FACSIMILE TRANSMISSION

I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, Mail Stop AF, Alexandria, VA 22313-1450 this 9 day of November, 2006.

